CLAIMS

What is claimed is:

1. An interpositional arthroplasty system for use in repairing ginglymus joints such as the joints of the ankle, comprising a tibiotalar implant that provides a first major surface adapted to be positioned against a tibia and a second major surface adapted to be positioned against a talus, and/or a talus-calcaneus implant that provides a first major surface adapted to be positioned against a talus and a second major surface adapted to be positioned against a calcaneus.

2. An implant according to claim 1 wherein the tibiotalar implant further comprises one or more external structures adapted to improve retention of the implant within the joint site.

3. An implant according to claim 2 wherein the structure comprises an integral bead shaped structure proximate its anterior side adapted to cap and thereby engage the neck of the talus.

4. An implant according to claim 1 wherein the implant comprises a biomaterial.

5. An implant according to claim 4 wherein the biomaterial is a polyurethane.

6. An implant according to claim 5 wherein the polyurethane is biocompatible with respect to cytotoxicity, sensitization, genotoxicity, chronic toxicity, and carcinogenicity.

7. An implant according to claim 5 wherein polyurethane has a Shore hardness of at least about 60 D or less.

8. An implant according to claim 1 wherein the talus-calcaneus implant includes a posterior lip.

9. An implant according to claim 1 wherein the talus-calcaneus implant includes a anterior lip.

10. A kit for a positional arthroplasty system for use in repairing ginglymus joints such as the joints of the ankle, the kit comprising:

a) at least one implant selected from the group consisting of a tibiotalar implant that provides a first major surface adapted to be positioned against a tibia and a second major surface adapted to be positioned against a talus, and a talus-calcaneus

implant that provides a first major surface adapted to be positioned against a talus and a second major surface adapted to be positioned against a calcaneus, and

b) one or more devices adapted to perform one or more steps selected from the group consisting of preparing the joint to receive an implant, determining an appropriate implant size for a particular joint, determining an appropriate implant thickness and/or angle, inserting the implant into the joint, and/or securing the implant to a desired extent.

11. A kit according to claim 10 wherein the kit includes a tibial smoother.

12. A kit according to claim 10 wherein the kit includes a talus smoother.

13. A kit according to claim 10 wherein the kit includes an implant gripper.

14. A kit according to claim 10 wherein the kit includes one or more implant templates.

15. A kit according to claim 11 wherein the tibial smoother is fenestrated.

16. A kit according to claim 11 wherein the tibial smoother is universal in its orientation.

17. A kit according to claim 12 wherein the talus smoother is fenestrated.

18. A kit according to claim 12 wherein the talus smoother is universal in its orientation.

19. A method of repairing a ginglymus joint, comprising the steps of providing and implanting according to claim 1.

20. A ginglymus joint that includes an implant according to claim 1.

21. A kit comprising a tool useful for preparing a joint to receive an implant, an apparatus useful for determining an appropriate implant size for the joint, an apparatus useful for determining an appropriate implant thickness, and a tool useful for inserting the implant into the joint and/or securing the implant to a desired extent.

22. A device for implantation into an ankle joint space within the body of a mammal, the device comprising a composite or monolith structure fabricated from a biocompatible, biodurable material that is adapted to be inserted into the joint compartment.

23. A device according to claim 22 wherein the implanted device is substantially free of anchoring portions that need to be attached to the bone, cartilage, ligaments or other tissue, yet by its design is capable of being used with minimal translation, rotation, or other undesired movement or dislocation within or from the joint space.

24. A device according to claim 23 wherein stability of the device within the joint space is provided by the fixation/congruency of the device to the one or the other of the two joint members.